

<sup>8</sup>  
~~36~~. (Amended) The population of claim <sup>1</sup>~~12~~, wherein each core photoluminesces at a wavelength in the range of 435 to 800 nm.--

<sup>9</sup>  
~~37~~. (Amended) The population of claim <sup>1</sup>~~12~~ wherein each overcoating comprises ZnS.--

<sup>10</sup>  
~~38~~. (Amended) The population of claim <sup>1</sup>~~12~~ wherein each overcoating comprises ZnSe.--

<sup>11</sup>  
~~39~~. (Amended) The population of claim <sup>1</sup>~~12~~ wherein each overcoating comprises CdSe.--

<sup>12</sup>  
~~40~~. (Amended) The population according to claim <sup>1</sup>~~12~~, wherein the FWHM is 45 nm or less.--

<sup>13</sup>  
~~41~~. (Amended) The population according to claim <sup>12</sup>~~40~~, wherein the FWHM is 20 nm or less.--

<sup>14</sup>  
~~42~~. (Amended) The population according to claim <sup>12</sup>~~40~~, wherein the FWHM is 15 nm or less.--

<sup>15</sup>  
~~43~~. (Amended) The population according to claim <sup>1</sup>~~12~~, wherein the plurality of cores has a size distribution having standard deviation no greater than 10% of a mean diameter of the population.--

<sup>16</sup>  
~~44~~. (Amended) The population according to claim <sup>1</sup>~~12~~, wherein the core is a member of a population having a size distribution with a standard deviation no greater than 5% of a mean diameter of the population.--

<sup>17</sup>  
~~45~~. (Amended) A population of nanocrystallites comprising a plurality of nanocrystallites, each nanocrystallite including:

a nanocrystalline core comprising MTe, wherein M is selected from the group consisting of Cd, Zn, Mg, and Hg, and

an overcoating of a semiconductor material on a surface of the core wherein the plurality of cores is monodisperse, and each core photoluminesces at a wavelength in the range of 435 to 800 nm.--

<sup>18</sup>  
~~46~~. (Amended) The population of claim <sup>17</sup>~~45~~ wherein each core comprises CdTe.--

<sup>19</sup>  
~~47~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein the plurality of cores has a size distribution having a standard deviation no greater than 10% of a mean diameter of the population.--

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<sup>20</sup>  
~~48~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein the plurality of cores has a size distribution having a standard deviation no greater than 5% of a mean diameter of the population.--

<sup>21</sup>  
~~49~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein each overcoating comprises ZnS.--

<sup>22</sup>  
~~50~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein each overcoating comprises ZnSe.--

<sup>23</sup>  
~~51~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein each overcoating comprises

CdSe.--

<sup>24</sup>  
~~52~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein each nanocrystallite photoluminesces with a quantum efficiency of at least 20%.--

<sup>25</sup>  
~~53~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein each nanocrystallite photoluminesces with a quantum efficiency of at least 40%.--

<sup>26</sup>  
~~54~~. (Amended) The population of claim <sup>17</sup>~~45~~, wherein each nanocrystallite photoluminesces with a quantum efficiency of at least 60%.--

<sup>27</sup>  
~~55~~. (Amended) A population of nanocrystallites comprising a plurality of nanocrystallites, each nanocrystallite including:

a nanocrystalline core comprising MTe, wherein M is selected from the group consisting of Cd, Zn, Mg, and Hg, and

an overcoating of a semiconductor material on a surface of the core, wherein the plurality of cores is monodisperse and each core photoluminesces with a full-width at half maximum (FWHM) of 70 nm or less.--

<sup>28</sup>  
~~56~~. (Amended) The population according to claim <sup>27</sup>~~55~~, wherein the FWHM is 45 nm or less.--

<sup>29</sup>  
~~57~~. (Amended) The population according to claim <sup>27</sup>~~55~~, wherein the FWHM is 20 nm or less.--

<sup>30</sup>  
~~58~~. (Amended) The population according to claim <sup>27</sup>~~55~~, wherein the FWHM is 15 nm or less.--

<sup>31</sup>  
~~59~~. (Amended) The population of claim <sup>27</sup>~~55~~, wherein the plurality of cores has a size distribution having a standard deviation no greater than 10% of a mean diameter of the population.--

23

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Page : 4

Attorney's Docket No. 01997-276001 / MIT 8529

*32*  
*32* ~~60~~. (Amended) The population of claim *27* ~~35~~, wherein the plurality of cores has a size distribution having a standard deviation no greater than 5% of a mean diameter of the population.--

*33*  
*33* ~~61~~. (Amended) The population of claim *27* ~~35~~, wherein the each nanocrystallite photoluminesces with a quantum efficiency of at least 20%.--

*34*  
*34* ~~62~~. (Amended) The population of claim *27* ~~35~~ wherein each core comprises CdTe.--

24

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